Interview with Vice Admiral Mark J. Edwards Deputy Chief of Naval Operations for Communication Networks (N6)

Vice Adm. Mark J. Edwards

In January 2006, the Chief of Naval Operations (CNO) announced the standup of a separate N6 Directorate for Navy as part of the greater realignment effort of his Navy staff in Washington.

The fast pace of change in technology and the ever-increasing importance of networks to modern warfare prompted the CNO to ensure the Navy has clarity, stability and discipline in managing warfare technology assets. N6 is responsible for centralized coordination of net-centric policy, planning, governance, requirements integration and investment direction to provide a competitive information advantage to combat-ready Navy forces.

N6 serves as the principal adviser to the CNO for all communication networks and is matrixed with N2 for ISR and N3/5 for IO and C2, and also performs as Navy's Chief Information Officer (CIO) ensuring optimum use of Navy information technology/information management (IT/IM) resources.

N6 includes N6F – Warfare Integration, N60/62 – Programming and Fiscal Management and N61 – Capability Analysis and Assessment.

CHIPS talked to Vice Adm. Edwards in December about six months since N6's standup.

CHIPS: Is it correct to say that some of the N6 mission areas were once held by other Navy commands or Navy staff? If so, what led to the consolidation of these particular functional areas?

Vice Adm. Edwards: The short answer to your question is, yes. Significant command, control, communications and computers (C4) changes within the Department of Defense are impacting all of the military departments. The DoD C4 paradigm shift from platform-based systems to network-centric warfare or NCW has prompted all the service chiefs to rethink their C4 investment strategies.

Under the concept of NCW, all services contribute information to the Global Information Grid, or GIG, for exploitation by all services and the combatant commanders. Services must now look at C4 functions across service lines. Networking the naval warrior through communication networks has become a linchpin in effective leadership for the 21st century.

Adm. Mullen's realignment of the OPNAV staff to stand up the N6 directorate is an inclusive step for the Navy to operate in the net-centric battlespace, and this means looking at C4 functions across the OPNAV staff and fleet commands. Getting the greatest return on the Navy's C4 investments requires a unified information technology (IT) strategy that is carried out by Navy leaders from the Pentagon down to the deck plates.

As we seek to better understand and capture where our business IT resources are, and how they are being used, one of the areas that I'm very interested in is having better visibility into how our IT money is being spent across the Navy. It's my sense that many of our legacy IT systems are in a sustainment mode and, in some cases, duplicative across the enterprise. Opportunities to redirect our investment dollars to other warfighting systems may exist as we collapse and sunset those legacy systems.

CHIPS: You have an enormous responsibility in planning the Navy investment and integration of warfare technology resources. How have you approached the coordination of all these functions?

Vice Adm. Edwards: As we work Program Review (PR)-09, the staff has done a lot of discovery into where we should focus our investments. We have a new generation ("Millennium" or "Gen Y") of Sailor entering the Navy that grew up with the Internet, who is collaborative and technologically savvy. One of our challenges is the lack of robust connectivity to our smaller warships. It is hard for our new Sailors not to be discouraged when they find out that our cruisers, destroyers and frigates have less bandwidth than they typically have at home or on their cell phone.

It is my intent to find IT investments that not only meet our warfighting requirements, but also provide our Sailors with the access they need to advance their careers and conduct their personal lives. In fact, our Sea Warrior program will require reach-back connectivity for our Sailors in order to get promoted and compete for their next job assignments. We also need to encourage more collaboration.

There is no reason the Navy should not embrace more chat or instant messaging capabilities across the fleet. Bandwidth and reliable network connectivity are key tenants of my PR-09 and Program Objective Memorandum (POM)-10 strategies.

We are also working toward aligning our IT functional areas with the correct resource sponsors. Currently, the Navy's IT portfolio is managed by 16 functional area managers. Our goal is to ensure the IT systems and applications within those functional areas are managed by the same OPNAV resource sponsor thus aligning our systems and applications with our warfighting requirements.

CHIPS: Do you have an eye on long and short-term investment? For example, the need for the Navy Expeditionary Combat Command was not forecasted even five years ago. How do you balance requirements in terms of fiscal responsibility and the larger question of national defense?

Vice Adm. Edwards: There is probably no need to remind your readers that we are a nation at war, and that the Navy has always

responded to the need to stay ahead of our adversaries. Our future C4 capabilities are being rewritten to meet the demands of conducting net-centric warfare with a joint and coalition maritime force in numerous mission areas, including major combat operations, global war on terror, homeland defense and stability operations. Today's enemies are dynamic, unpredictable, diverse and networked.

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That being said, the Navy has to remain flexible to the changes in the battlespace. I have engaged my staff to improve the return on Navy C4 investments. Part of my initial efforts is to focus on finding the resources to fund C4 capabilities that the *fleet* is telling me *they* need — namely more bandwidth — and the ability to rapidly develop and field new capabilities.

I have directed my staff to use greater scrutiny in approving expenditures based on the capability return for the operating force. In-service legacy IT systems can be a tremendous drain on our limited resources, and they prevent us from being more agile in the IT arena. The fleet must be provided with the most effective C4/IT capability to safely execute its missions.

CHIPS: Can you discuss some of the successes that N6 has had since standup?

Vice Adm. Edwards: The most important success we've had since standing up is getting everyone pulling in the same direction. We developed a 100 Day Plan that I promulgated on my first day as N6. It directed specific actions in the following areas:

- Governance
- Legacy network reduction
- Capturing the money the Navy is investing in IT
- Maritime Headquarters/Maritime Operations Center (MHQ/MOC) comms and C2
- Maritime Domain Awareness (MDA)
- Sea Warrior IT
- Rapid capability development
- Open architecture
- Next generation enterprise networks
- Increasing effective bandwidth to tactical users
- Low cost operationally responsive space
- Tactical network realignment
- Field programs under cost and on schedule
- Strengthen Navy C4/IT community management and support

We have also put together a strategy for PR-09 that is focusing our efforts in three areas: warfighting, manpower and business. With warfighting, our demand for Web service capabilities to support warfighting continues to explode. The MHQ/MOC mirrors commercial trends in connectivity and information management capabilities. Our acquisition process is not agile, and we need to instill a rapid capabilities development process across the Navy enterprise.

My staff also recently completed a MDA connectivity workshop which brought together allied and fleet N6 officers to identify technical and procedural requirements for greater allied interoperability. Adm. Mullen has identified our allies and coalition partners as important components of his naval strategy.

My experience working with foreign navies has been that it takes practice, patience and persistence to become an efficient multinational maritime force. C4 technology is meant to facilitate operational evolution. This MDA connectivity workshop has been a great success in bringing naval players together to identify critical future C4 and interoperability capabilities.

On a more technical side, my staff is upgrading the high frequency (HF) radio capability across the fleet in order to enable better interoperability with other nations, many of whom use HF for long-range communications. Advances in HF radio technology now allow low rates of data to be exchanged which helps coordination among coalition partners.

Internet Protocol over HF radio is gaining increasing interest with our allies following technology demonstrations during the recent Trident Warrior exercise series.

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The Navy Combat Identification Capabilities Organization (CIDCO) was established by OPNAV N6 to function as the Navy's Office of Primary Responsibility for combat identification (CID). CID is a process used for force posturing, command and control, situational awareness as well as shoot, no-shoot employment decisions.

CID provides, through net-centric CID platforms, the capability for joint and coalition interoperability through accurate characterization of detected objects in the battlespace. CID is a fundamental requirement in increasing combat effectiveness in long-range, highly accurate weapons.

Manpower will always be a challenge. Our junior Sailors are dissatisfied with current Internet connectivity and our ability to provide distance learning through programs like Navy Knowledge

Online, Sea Warrior and Distance Support while at sea. We are working with N1, the systems commands and the fleet to rapidly field these capabilities.

The business side of the Navy is hamstrung with our legacy IT systems that make our networks vulnerable to hackers and intrusions from our adversaries. We need to move to more distributed network operations and implement a data strategy that supports our information requirements.

We are working with the Department of the Navy Chief Information Officer (DON CIO), Commander, Fleet Forces Command, Commander, Pacific Fleet and the type commanders to identify, train and certify the Information Assurance (IA) Workforce. In 2005, the Department of Defense promulgated an Information Assurance Improvement Program to develop an IA Workforce who possesses a common knowledge base in order to protect and maintain information, information systems and networks.

Over the next year, Information System Technicians, Information Professionals and the civilian workforce, with privileged access to the network, should look forward to seeing new and expanded opportunities for IA training and free vouchers to obtain commercial certifications in information assurance.

We are also earnestly working with DON CIO to develop a cogent strategy for our people in the Information Management/ Information Technology (IM/IT) Workforce. As a starting point, I have talked with the Information Professional and Information Warfare communities to ensure I have situational awareness of the communities, their needs, and an appreciation of the vast talents they bring to bear in support of the Naval NETWAR FORCEnet Enterprise.

CHIPS: How has the war on terror affected how the Navy is looking at its C4ISR networking capabilities?

Vice Adm. Edwards: The war on terror has highlighted the need to provide robust, reliable, high speed unclassified and classified data exchanges for hosted applications and with coalition forces. The Navy is investing in network infrastructures such as Combined Enterprise Regional Information Exchange System–Maritime (CENTRIXS-M) and Integrated Shipboard Network System (ISNS).

N6 is making sure that ISNS and CENTRIX-M networks provide increased capability to meet documented warfighter requirements such as the Automatic Information System and the Global Command and Control System-Maritime. This will foster a net-centric operational environment across the enterprise that allows improved fleet sufficiency in information sharing for the warfighter. It will also facilitate tactical and operational information sharing with our coalition partners.

CENTRIXS-M grew from an operational need for information sharing with allies and coalition partners during Operation Iraqi Freedom. The Navy has made rapid advancements with CENTRIXS-M to improve the free flow of actionable intelligence between the Navy and our allied and coalition partners.

The Navy's Space and Naval Warfare Systems Command has added some significant enhancements recently with the addition of multilevel thin clients (MLTC) to the CENTRIXS-M architecture. MLTC significantly improves our ability to share information simultaneously with our partners in the global war on terror, and it was fielded with relatively little expense.

MLTC allows Sailors to access several enclaves from the same terminal. This reduces the number of workstations required onboard and the expense to maintain them. This is a great example of the agility we need in our IT capability procurement.

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CHIPS: Can you talk about the information operations mission area?

Vice Adm. Edwards: I'm glad you asked about information operations, or IO — it is a really important area of our portfolio. N6 has the responsibility for IO in a matrixed role with N3/N5. For me, IO is the perfect complement to all my other N6 mission areas.

Over the last four months, we've studied technology trends and have an appreciation for how these can accelerate C2, not only for us, but for our adversaries as well. By applying these trends to our C2, we can generate our force capability more quickly and, at the same time, use IO to slow the generation of our adversaries force capability. This particularly applies to the manner in which we will conduct major combat operations in the future.

The conflict against transnational terrorism is an information-rich fight that challenges the existing way we do IO. We can't expect to jam a terrorist radar or spoof its missile seeker. The techniques we use in GWOT will be much more subtle and directed at individuals vice opposing naval forces. The forward operating posture of U.S. Naval Forces is well-suited for these kinds of effects.

In a world that is globally connected, the ability to employ the elements of IO is critical to achieving and maintaining information superiority. As we continue to operate today and prepare for the future, using computer network defense to protect our IT investments and providing the fleet with unique electronic or digital attack capabilities is essential for operating around the globe in the information-laden 21st century.

There are other Navy players that work capabilities for specific platforms that can perform IO missions, but we at N6 focus on cross-platform or platform independent weapons and tools.

In the coming year I am particularly interested in examining high-payoff efforts to exploit, influence, deny, degrade, deceive and/or delay adversary efforts using computer network attack as well as electronic attack.

In summary, IO is a perfect example of why Adm. Mullen reestablished the N6 Directorate. It is a key warfighting area for

the Navy in the post 9/11 security environment, where we are placing increased emphasis on non-traditional mission areas and asymmetric warfare. It is imperative that we stay ahead of our adversaries and be able to exploit, influence, deny, degrade and/or deceive inside their decision loop while maintaining the integrity of our own.

CHIPS: As part of your job, do you work with Vice Adm. Nancy Brown, the J6 on the Joint Staff, and your counterparts in the other services?

Vice Adm. Edwards: My team and I work very closely with the Joint Staff and the other service 6s. The transformation to a network-centric battlespace means the services must interact more closely then ever before. The key to net-centric interoperability is the GIG. My staff works closely with our sister services through participation on several joint requirements boards.

Closest to home, the Blue in Support of Green, or BISOG, is a standing three-star level requirements board focusing on Navy's commitment to supporting the Marines. The long-standing relationship between Navy and the Marines has been cemented by the need to provide seamless connectivity whether our maritime force is in transit, conducting ship to objective maneuver operations, or providing logistics support.

I've just sent a liaison officer to Headquarters Marine Corps C4 to complement the Marine communications officer on my staff. We work very closely with Brig. Gen. George Allen, Director C4, Headquarters Marine Corps, on such projects as installing secure wireless network access aboard amphibious ships to support embarked forces.

My staff represents me on the U.S. Joint Forces Command-led CID Working Group (CID WG) that also has representatives from the services, combatant commands, Joint Staff and agencies that report to the C2 Functional Capabilities Board. This CID WG develops and helps coordinate CID, blue force tracking, and Joint Blue Force Situational Awareness tasks, as well as maintains accountability in a formalized action plan that could influence the Navy investment and integration of warfare technology resources.

Going a step further, my staff has been engaged in developing the systems and procedures that support interoperability with our closest allies. The reality of Adm. Mullen's MDA concept means our Navy operating with long-standing allies and ad hoc coalition partners in a myriad of wartime and peacetime humanitarian missions.

The recent Pakistan flood relief and Joint Task Force Lebanon missions demonstrated how effective naval command and control is exercised through C4 circuits across the joint and coalition environment.

OPNAV N6 is also the Navy Major Area Sponsor for the JC4I Curriculum that is taught at the Naval Postgraduate School and participates in all curriculum reviews for the JC4I course taught at the Joint Forces Staff College. N6 works very closely with the J6 staff personnel to identify Joint Officer and Enlisted Manpower, Personnel, Training and Education requirements.

The Navy's IT portfolio reduction and standardization efforts are closely aligned with DoD and the Marine Corps. We both use the Department of Navy Applications and Database Management System to capture detailed information on our investments in networks, servers, devices, applications and databases. The functional area managers in both services work together with the overall goal of developing standard processes and solutions.

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CHIPS: Can you talk about N6's role in space communications?

Vice Adm. Edwards: It is a naval tradition for Navy commanding officers to operate with relative independence from higher headquarters. The net-centric battlespace, however, requires greater connectivity than ever before. For the Navy, that means greater dependence on satellite communications (SATCOM). The majority of Navy's space-related capabilities are provided by either the Air Force or the National Reconnaissance Office.

My staff pursues space-delivered services through robust participation in joint and national security space decision-making processes. My directives are to focus on smart investments in space technology and exploit space technology developed by other services and national sources.

The Navy Tactical Exploitation of National Capabilities Program, or TENCAP, leverages a modest research and development budget to develop innovative solutions for emerging fleet requirements and mission capability gaps in this area.

The Navy is also the acquisition agent for narrowband, unprotected SATCOM, and is responsible for the joint Mobile User Objective System (MUOS) development and acquisition, which will replenish our narrow-band communications satellite system. MUOS will provide 'communications on the move' from the high-seas to jungles — to urban environments for disadvantaged users.

MUOS is the common denominator for command and control capability from tactical to theater levels, to allies and coalition partners, and between DoD and non-DoD agencies.

In addition to its SATCOM responsibilities, Navy acquires the applicable user equipment to enable use of space capabilities, such as the Global Positioning System. In the arena of rapid technology deployment, the Naval Research Laboratory's Center for Space Technology has taken a key role in the Tactical Satellite (TacSat) series of small satellite experiments, starting with the development of TacSat-1 funded by the Office of Force Transformation.

To view Vice Adm. Edwards' biography, go to Navy NewsStand's Biographies page at http://www.navy.mil/navydata/bios/navybio.asp?bioID=102.

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